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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,388	01/15/2004	Takeshi Kobayashi	61282-055	4950

7590 05/04/2006

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600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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NGUYEN, DILINH P

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/757,388

Applicant(s)

KOBAYASHI ET AL.

Examiner

DiLinh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Persuant to telephone interview dated 4/27/06 with Mr. Ramyar M. Farid, it was agreed the finality of the previous office action is improper and a corrected office action is set forth below.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ooyama et al. (U.S. Pat. 6191494).

- Regarding claim 1, Ooyama et al. disclose a lead frame comprising:  
a lead frame body 31 comprising a sheet-shaped body made of metal [Cu] (fig. 5A, column 6, lines 2-3);  
a groove portion 33b for forming a lead which is formed by a predetermined depth in a lead forming region on a surface of the lead frame body; and  
a lead 28b having a portion which protrudes from the groove portion laterally onto the surface of the lead frame body, the lead being made of material [Ni or Pd] (fig. 5E, column 7, lines 17-20) different from material of the lead frame body (fig. 5E).
- Regarding claim 2, Ooyama et al. disclose that the lead including: a first conductor layer 28a-2 formed in the groove portion; a second conductor layer

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28b-1 formed on the first conductor layer; and a third conductor layer 28b-2 formed on the second conductor layer; wherein the first conductor layer is assembled to an assembling member, and the third conductor layer 28b-2 is assembled to a bonding pad of a semiconductor chip (fig. 6).

- Regarding claim 3, Ooyama et al. disclose that wherein the first conductor layer covers an entire inner wall of the groove portion (fig. 6).
- Regarding claim 5, Ooyama et al. disclose that the lead includes a barrier layer [Au layer 28a-1] for suppressing a reaction between the lead frame body and the first conductor layer, the barrier layer being provided between the first conductor layer and the groove portion (figs. 5G and 6).
- Regarding claim 19, Ooyama et al. disclose a semiconductor device comprising:
  - a semiconductor chip;
  - a multi-layer lead connected to the semiconductor chip and having a first conductor layer 28a (fig. 5C);
  - a piece of sealing resin 23; wherein a portion of the reverse face of the multi-layer lead protrudes from a principal plane of the piece of sealing resin 23, the first conductor layer 28a covering an entire surface of the portion (fig. 5H, column 6, lines 20-30).
- Regarding claim 20, Ooyama et al. disclose that the multi-layer lead further including: a second conductor layer 28a-2 laminated inside the first conductor layer 28a-1; and a third conductor layer 28b-1 formed inside the second conductor layer (fig. 6).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN

*Wael H. Hany*  
*SPE 2814*